

ABSTRACT OF THE DISCLOSURE

A method and apparatus that differentially encodes and decodes data symbols
5 in dual domains is taught. Data packets are encoded, transmitted, and decoded during
a plurality of symbol intervals on a plurality of sub-carriers. Encoding and decoding
are accomplished across both the time and frequency domains such that the minimum
number of carrier states are employed as reference only states that do not encode a
symbol of data in and of themselves. A rule of adjacency is followed, both across
10 time and frequency, so that decorrelation is minimized. Any modulation scheme that
is applicable to differential encoding and decoding can be utilized. Communication
systems that couple via radio waves, through metallic conductors, or over fiber optic
paths can be employed.